

STUDY OF PATTERN OF URINARY SEDIMENTS IN RENAL DISEASES

ABSTRACT

Background: Urine microscopy with examination of the urine sediment provides useful diagnostic information about the histology of the kidneys and can be used to differentiate a number of clinical conditions based on the pattern of sediments. The present study was aimed to describe the various patterns of urinary sediments in patients with renal diseases and to correlate these urine sediment patterns with type and severity of renal damage namely the histopathological patterns in renal biopsy, serum creatinine and urinary protein excretion levels.

Methods: A total of 100 patients presenting with symptoms pertaining to renal disease were included in the study. Clinical information and serum biochemical parameters were obtained. Urine examination was done and Lakhmir S.Chawla.et.al. cast scoring index was adopted to grade the urine sediment findings. Renal biopsy was performed in patients with indications and immunofluorescence pattern was studied. The concordance of pattern of urinary sediments in various renal diseases with specific diagnosis was noted. Urine sediment score was correlated with serum creatinine as reference for extent of damage and compared with urine protein excretion level. Statistical significance were calculated.

Results: The most common sediment pattern was nephrotic sediment (41%) followed by nephritic sediment (33%) and chronic renal failure (20%). Male predominance was seen forming 57% of cases with the mean age 34.94 years. Post infectious glomerulonephritis (19%) was the most common diagnosis on renal biopsy trailed by

membranous nephropathy (17%) and minimal change disease (12%). Statistically significant positive correlation was seen between sediment scoring and serum creatinine in patients of endocapillary proliferative glomerulonephritis, minimal change disease, membranoproliferative glomerulonephritis and chronic renal failure patients. Urine sediment score had added values of early prediction of damage, follow up and prognostic significance. On comparison, 24 hours urine protein level showed overall significant positive correlation with urine sediment score.

Conclusion: Urine sediment examination can be used as an effective diagnostic test for predicting the diagnosis and severity of renal injury along with serum creatinine and urine protein levels in the evaluation of renal diseases.

Key words :

Urine examination, sediments, renal diseases, urine sediment score, creatinine